



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

August 6, 2003

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

RE: **Iron Dynamics, Inc. 033-17200-00076**

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision - Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPERAM



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August 6, 2003

Mr. Barry Smith
Iron Dynamics, Inc.
4500 County Road 59
Butler, Indiana 46721

Dear Mr. Smith:

Re: Exempt Construction and Operation Status,
033-17200-00076

The application from Iron Dynamics, Inc., received on April 28, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission units, located at 4500 County Road 59, Butler, Indiana, are classified as exempt from air pollution permit requirements:

- (a) One (1) enclosed RHF green briquetter, constructed in 2002, replacing the existing pelletizing equipment, with a maximum throughput rate of 96 tons/hr.
- (b) One (1) enclosed SAF hot briquetter, constructed in 2002, with a maximum throughput rate of 106 tons/hr.
- (c) One (1) hot pan conveyor, identified as Hot Pan Conveyor #1, constructed in 2000, with a maximum throughput rate of 106 tons/hr.
- (d) One (1) hot pan conveyor, identified as Hot Pan Conveyor #2, to be constructed in 2003, with a maximum throughput rate of 106 tons/hr.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (2) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of the hot pan conveyor transferpoints shall be limited to 51.9 lbs/hr when the process weight rate is 106 tons/hr.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

This existing source has submitted their Part 70 application (T033-12614-00076) on January 11, 2000. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Yu-Lien Chu, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7871 to speak directly to Ms. Chu. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ERG/YC

cc: File - DeKalb County
DeKalb County Health Department
Air Compliance - Doyle Houser
Northern Regional Office
Permit Tracking - Sara Cloe
Technical Support and Modeling - Michele Boner
Compliance Branch - Karen Nowak
Part 70 Application File - T033-12614-00076

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name: Iron Dynamics, Inc.
Source Location: 4500 County Road 59, Butler, Indiana 46721
County: DeKalb
SIC Code: 3312
Operation Permit No.: T033-12614-00076
Permit Reviewer: ERG/YC

The Office of Air Quality (OAQ) has reviewed an application from Iron Dynamics, Inc. relating to the construction and operation of the following emission units:

- (a) One (1) enclosed RHF green briquetter, constructed in 2002, replacing the existing pelletizing equipment, with a maximum throughput rate of 96 tons/hr.
- (b) One (1) enclosed SAF hot briquetter, constructed in 2002, with a maximum throughput rate of 106 tons/hr.
- (c) One (1) hot pan conveyor, identified as Hot Pan Conveyor #1, constructed in 2000, with a maximum throughput rate of 106 tons/hr.
- (d) One (1) hot pan conveyor, identified as Hot Pan Conveyor #2, to be constructed in 2003, with a maximum throughput rate of 106 tons/hr.

History

On April 28, 2003, Iron Dynamics submitted an application to IDEM, OAQ requesting to replace the existing pelletizing equipment with briquetters, replace the existing conveyor transfer system, and add one additional hot pan conveyor. Iron Dynamics is an existing gray iron foundry direct reduced iron facility and is a PSD major source. The source submitted their Part 70 permit application (T033-12614-00076) on January 11, 2000. This Part 70 permit is currently being drafted and has not yet been issued.

The modified units are part of the pig iron production line, which includes existing Rotary Hearth Furnace (RHF) and Submerge Arc Furnace (SAF). The source stated that the briquetting equipment was determined to be the correct product preparation technique and was installed to improve product quality. The replacement of conveyor transfer systems is due to the high fugitive emissions from the original conveying system. In addition, the source stated that the operation of the whole pig iron production line is still in the research stage and this production line has never been operated at the normal production rate, even after this modification. During the July 8, 2003 meeting with the source, IDEM, OAQ determined that this modification will not cause debottlenecking or an increase in utilization of the exiting furnaces RHF and SAF because these modifications were undertaken to improve product quality and worker safety and do not increase the production capacity of the whole pig iron production line.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 28, 2003, with additional information received on May 19, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (page 1).

Potential To Emit of Modification Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	4.09
PM-10	1.95
SO ₂	--
VOC	--
CO	--
NO _x	--

Justification for Modification

This modification to a Part 70 major source is being performed pursuant to 326 IAC 2-1.1-3 (Exemption) because this is not a modification regulated by 326 IAC 2-7-10.5 (Part 70 Source Modification) and has potential to emit PM/PM10 less than 5 tons/yr, the exemption thresholds in 326 IAC 2-1.1-3(e)(1).

County Attainment Status

The source is located in DeKalb County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. DeKalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) DeKalb County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
Since this type of operation is in one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	Greater than 100
PM10	Greater than 100
SO ₂	Greater than 100
VOC	Less than 100
CO	Greater than 100
NO _x	Greater than 100

- (a) This existing source is a major stationary source because at least one of the attainment regulated pollutants is emitted at a rate of 100 tons or more per year, and it is in one of the 28 listed source categories.
- (b) These emissions were based on the Addendum to Technical Support Document (ATSP) for SSM #033-15955-00076, issued on December 18, 2002.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units after controls.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Briquetters	Negligible	Negligible	-	-	-	-	-
Hot Pan Conveyors	4.09	1.95	-	-	-	-	-
Total PTE of this Modification	4.09	1.95	-	-	--	--	-
PSD Significant Modification Thresholds	25	15	40	40	100	40	NA

This modification to an existing major stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD

requirements do not apply to this modification.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T033-12614-00076) application on January 11, 2000. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this modification.
- (c) This modification does not involve a pollutant-specific emissions unit:
 - (1) with the potential to emit before controls equal to or greater than one hundred (100) tons per year, and
 - (2) that is subject to an emission limit and has a control device that is necessary to meet that limit.

Therefore, the units in this modification are not subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM).

State Rule Applicability - Briquetters and Hot Pan Conveyors

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) Since the briquetters are enclosed processes, there are negligible particulate emissions from these units. Therefore, the requirements of 326 IAC 6-3-2 are not applicable.
- (b) Particulate emissions from each of the hot pan conveyor transfer points shall be limited to 51.9 lbs/hr when the process weight rate is 106 tons/hr.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

According to the emission calculations (see Appendix A), the potential to emit PM from each conveyor transfer point is less than the emission limit above. Therefore, these conveyors are in compliance with 326 IAC 6-3-2.

Conclusion

The construction and operation of the two (2) briquetters and two (2) hot pan conveyors shall be subject to the conditions of the attached proposed Exemption 033-17200-00076.

**Appendix A: Emission Calculations
PM10 and PM Emissions
From the Hot Pan Conveyors #1 and #2**

**Company Name: Iron Dynamics, Inc.
Address: 4500 County Road 59, Butler, IN 46721
Exemption #: 033-17200-00076
Reviewer: ERG/YC
Date: May 20, 2003**

Maximum Throughput Rate:

106 (tons/hr)

Process	Number of Units	Uncontrolled PM10 Emission Factor (lbs/ton)	Uncontrolled PTE of PM10 (lbs/hr/unit)	Uncontrolled PTE of PM10 (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PTE of PM (lbs/hr/unit)	Uncontrolled PTE of PM (tons/yr)
Conveyor Transfer Points	3	0.0014	0.148	1.95	0.00294	0.312	4.09
Total				1.95			4.09

Note: The uncontrolled emission factors for the conveyor transfer point are from AP-42, Chapter 11.19, Table 11.19.2-2 - Crushed stone processing operations - SCC 3-05-020-06 (01/95). Assume all TSP emissions equal to PM emissions and the TSP emission factors can be estimated by multiplying PM10 emission factors by 2.1.

Methodology

Uncontrolled PTE (lbs/hr/unit) = Maximum Throughput (tons/hr) x Uncontrolled Emission Factor (lb/ton)

Uncontrolled PTE (tons/yr) = Uncontrolled Emissions (lbs/hr/unit) x Number of Units x 8760 hr/yr x 1 ton/2000 lbs